



## Respirator Training

### Half-Face & Full-Face Cartridge Respirators



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## Respirator Training

### Half-face & Full-face Cartridge Respirators




Half-face respirator
Full-face respirator

This training module is only for these type of respirators

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## Respirator Training

### Why is This Training Required?

Training is required by WISHA for anyone who wears a respirator.

We also are providing this training so you will know how to protect your health.

If you don't know how to use a respirator properly, you can get a false sense of protection.



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## Respirator Training

### Respirator Program Administrator

Our respirator administrator is [name]

This person is responsible for overseeing our respirator program.

This person has training on respirators.



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## Respirator Use

### Where We Require Respirators

Respirators are required in the following locations or for the following job tasks:

[List here]



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## Respirator Use

The dust, chemicals or products we provide respirators for are the following:



[List your chemicals or products used here.]

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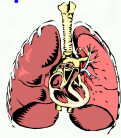
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## How Respirators Work

### How Do Cartridge Respirators Work?

When used properly, respirators prevent the inhalation of chemicals and dust in the air and protect the lungs.



When you inhale, air is pulled through the cartridge, where air contaminants are trapped.



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## How Respirators Work



Air inhaled in

Air inhaled in

Air exhaled out

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## How Respirators Work

### How Cartridge Respirators Work

Air movement is controlled by rubber inhalation and exhalation valves.

The adjustable straps are used to keep the respirator snug on the face.



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## Respirator Cartridges

### Use the Right Cartridge For the Job

The wrong cartridge won't protect you from dust or chemicals in the air.

A chemical cartridge doesn't filter out dust.

There are several kinds of chemical cartridges.

Combination dust/chemical cartridges are available.



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## Respirator Cartridges

### Types of Cartridges



Dust cartridges filter out dust only.

Chemical cartridges trap different types of chemicals, but not dust.

Cartridges are color-coded for the type of chemical or dust.

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
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## Respiratory Cartridges

### Respirator Cartridge Color Coding

	Ammonia- green
	Organic vapor (solvents) - black
	Acid gas (sulfuric acid, for example) - white
	Acid gas and organic vapor - yellow
	Acid gas, ammonia, & organic vapor - brown
	Chlorine – white & yellow

These are some commonly used chemical cartridges

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## Respirator Cartridges

### Changing Cartridges

Cartridges must be changed regularly.

Dust cartridges are changed when they become difficult to breathe through or are damaged.

Chemical cartridges are changed on a pre-determined schedule.



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## Respirator Cartridges

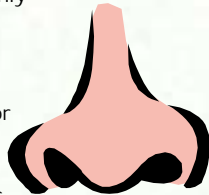
### Limits of Chemical Cartridges

Chemical cartridges can absorb only so much chemical.

When their capacity is reached, breakthrough will occur.

You can't always tell if a respirator leaks by a chemical odor.

Some chemicals have no odor, or can only be smelled at high levels.



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## Training Break

This blank slide can be used for a training break or to divide the training into two shorter sessions.

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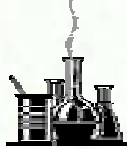
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## Respirator Protection

### Half-face Respirator Protection Factor

Half-face cartridge respirators only provide protection to levels **10 times** above the chemical or dust **permissible limit**.



#### Example

Ammonia Permissible Limit – 25 ppm



Respirator Protection Factor for ammonia – 250 ppm

ppm = parts per million

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## Respirator Protection

### Full-face Respirator Protection Factor

Full-face respirators can provide protection to levels **100 times** above the **permissible limit**.



Full-face respirators also provide eye protection for irritating chemicals.

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## Respirator Protection

### What is a Chemical "IDLH" Level?

"IDLH" means "immediately dangerous to life or health".

Most chemicals have an IDLH level where cartridge respirators can't be worn.

A cartridge respirator is too prone to leaking to use at levels above IDLH.

The only alternative is a supplied air respirator.



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## Respirator Protection

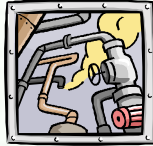
### Where Cartridge Respirators Don't Work



Cartridge respirators are not good for large chemical spills or leaks, or thick dust clouds.

Don't use them in emergency situations – they won't provide enough protection.

In the event of a major leak or spill, leave the area.



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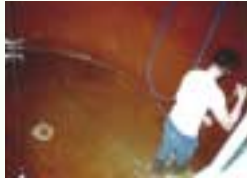
## Respirator Protection

### Where Cartridge Respirators Don't Work

Cartridge respirators don't work where there is a lack of oxygen.



Confined spaces like tanks or manholes can have an oxygen deficiency or high levels of toxic chemicals.



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## Respirators and Physical Fitness

### Medical Evaluations

Medical evaluations are required for anyone wearing respirators.

Breathing through a respirator is work for the body.

Respirators can be hazardous to people with heart or lung problems.



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## Respirator and Physical Fitness

### Medical Questionnaire

The first step is a confidential medical questionnaire.

A healthcare provider decides if you need a medical exam.

Results are only used to determine if you are fit to wear a respirator.



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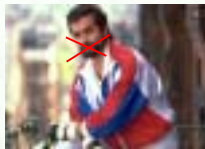
## Respirator Fit

### Respirators Must Fit Properly

Respirators must fit properly to prevent leaks around the edges.

Fit-testing must be done before first wearing a respirator.

Beards are **not allowed** when wearing a respirator.



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## Respirator Fit

### Fit-testing

In fit-testing, you first try on several types and sizes of respirators.

After a comfortable respirator is selected, we conduct the actual fit-test.

The method we use for fit-testing is as follows:

**[describe]**



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## Respirator Fit

### Respirator Seal Check

Whenever you first put on a respirator, you must do a seal check as illustrated.



Inhalation check



Exhalation check

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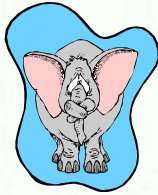
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## Respirator Problems

### When it Smells or You Feel Sick



Sometimes, respirators don't work.

If you notice an odor or feel ill, or think your respirator leaks, notify your supervisor.

Leave the area when necessary.



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## Respirator Maintenance

### How to Clean and Maintain Respirators

Respirators must be cleaned, inspected and maintained regularly.

Cleaning is especially important in dusty areas.

Clean in warm soapy water.

Allow to dry thoroughly before storing or using.



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## Respirator Storage

### How Should Respirators be Stored?

Respirators must be stored in a clean dry place.

Don't store them unprotected in your work area.

The storage location for your respirators is: [state location here]



Don't store them like this!

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## Respirator Regulations

### WISHA Regulations

L & I - WISHA has regulations on respirator use.

Everything covered in this training is required in these regulations.



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## Respirator Training

The following questions are optional. They can be used to check employees' understanding of this training and promote discussion. You can add more questions for a short written or verbal quiz.

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## Respirator Training

### Question 1

What kind of cartridge is needed for ammonia?

- a) A large one
- b) A chemical cartridge
- c) A black one
- d) Any kind will work

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## Respirator Training

### Question 2

When should a chemical cartridge be changed?

- a) Every day
- b) When it is hard to breathe through
- c) When you feel like it
- d) On a regular basis depending on the chemical

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## Respirator Training

### Question 3

Why can't you wear a respirator over a beard?

- a) The beard will interfere with your breathing
- b) It will cause the respirator to leak
- c) It will cause skin irritation
- d) It will look stupid

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## Respirator Training

### Question 4

When is a half-face or full-face respirator not protective enough?

- a) In the case of a large chemical spill
- b) When you have to talk to other employees
- c) When you have to enter a tank
- d) When your eyes burn

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## Respirator Training

### Question 5

What does it mean if you smell a chemical while wearing your respirator?

- a) The cartridge is used up
- b) The respirator doesn't fit properly
- c) The exhalation valve is missing
- d) You have a very sensitive nose

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